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EXAMINER	
SHEW, JOHN	
ART UNIT	**PAPER NUMBER**
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/990,754	FEUERSTRAETER ET AL.	
	Examiner	Art Unit	
	John L. Shew	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *5/16/2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7,9-12,16,19,21,23-26 and 28-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7,9-12,16,19,21,23-26,28-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 February 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2, 3, 4, 5, 7, 9, 19, 10, 11, 12, 21, 16, 23, 24, 25, 26, 28, 29, 33, 34, 35, 36, 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timm et al. (Patent No. 6055268) in view of Nakashima et al. (Patent No. US 6636531 B1).

Claim 1, Timm teaches a method comprising identifying a processing capability of a remote device (Mid-band Digital Subscriber Line of the Central office modem sending probing tones to the remote Mid-band Digital Subscriber Line of the Residential modem of FIG. 3b, to determine identify its line code capability/preference ref. by col. 18 lines 40-67), and slowing an effective data rate within a communication channel with the remote device based at least in part on the processing capability of the remote device (reduced rate capability of the MDSL-R for interface to the Voice Band Analog Front End 120 which is a channel of lower frequency than the DSL Analog Front End 110 ref. by col. 18 lines 65-67, col. 19 lines 1-16). Timm does not teach wherein slowing the effective data rate comprises computing a ratio of processing capability of the remote device to a data rate of the communication channel.

Nakashima teaches wherein slowing the effective data rate comprises: computing a ratio of processing capability of the remote device to a data rate of the communication channel (mapping the MPEG device rate ratio of MPEG-2 rate to DS3 rate ref. by col. 8 lines 49-58); and selectively inserting a number of frames of idle control elements (Null Data Generating Unit 6 of Fig. 1, map null data into stuff area ref. by col. 3 lines 20-27) between at least one frame of substantive content based at least in part based on the computed ratio (contents of MPEG-2 TS Data of Fig. 4c, with Null stuff field 22 determined by Stuff Present Identifier 21 of Fig. 4b, col. 8 lines 18-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission rate mapping of Nakashima to the multimode digital modem of Timm for the purpose of transmitting a sequence of data which is transmitted at a given transmission rate at a desired transmission rate greater than the former transmission rate as suggested by Nakashima (col. 3 lines 9-13).

Claim 2, Timm teaches wherein identifying the processing capability of the remote device comprises sending a capability request (channel probing tones representing the various rate Carrierless AM/PM or Discrete MultiTone messages ref. by col. 19 lines 58-67, col. 20 lines 1-15), and receiving a response to the request denoting at least the processing capability of the remote device (Rate Request and Available Rate Notify sent over the Communication Hardware layers 7330 7430 ref. by FIG. 7a, col. 22 lines 51-62).

Claim 3, Timm teaches wherein identifying the processing capability of the remote device comprises receiving an indication from the remote device denoting at least the

processing capability of the remote device (Rate Request and Available Rate Notify sent over the Communication Hardware layers 7330 7430 ref. by FIG. 7a, col. 22 lines 51-62).

Claim 4, Timm teaches wherein the indication also denotes a communication capability of the remote device (Rate Request and Available Rate Notify sent over the Communication Hardware layers 7330 7430 ref. by FIG. 7a, col. 22 lines 51-62, tone message rates ref. by col. 20 lines 1-15).

Claim 5, Timm teaches further comprising establishing at least one virtual channel within the communication channel (Software Driver layer 7310 7410 communicating through a virtual channel of a DLC which is subsequently encapsulated for transmission over the Communication Hardware Layer using DMT subchannels of FIG. 7a, col. 24 lines 61-65), each virtual channel having a data rate less than that of a maximum transmission rate of the communication channel (Software Driver layer being an upper layer to the Communication Hardware Layer and thus has a data rate less than the Communication Hardware Layer ref. by col. 23 lines 9-43), and wherein the data rate of each virtual channel is based at least in part on the identified processing capability of the remote device (number N of kbit/sec channels wherein the N is based on processing capability of the device ref. by col. 23 lines 31-40).

Claim 7, Timm teaches wherein at least the processing capability of the remote device is obtained through auto-negotiation (overall rate negotiation method wherein the Change Throughput step 7965 modifies the rate according to the remote device capabilities of FIG. 7f, col. 27 lines 11-17).

Claim 9, Timm teaches a multimode digital modem. Timm does not teach wherein the number of frames inserted reduces a rate at which substantive frames are received by the remote device to a level commensurate with the processing capability of the remote device.

Nakashima teaches the number of frames inserted reduces a rate at which substantive frames are received by the remote device to a level commensurate with the processing capability of the remote device (alternate Null byte insertion due to mapping of 257 byte MPEG-2 TS into DS3 frame followed by 256 byte MPEG2 TS into DS3 frame ref. by col. 8 lines 59-67, col. 9 lines 1-8, for continuous MPEG-2 stream at far end).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission rate mapping of Nakashima to the multimode digital modem of Timm for the purpose of transmitting a sequence of data which is transmitted at a given transmission rate at a desired transmission rate greater than the former transmission rate as suggested by Nakashima (col. 3 lines 9-13).

Claim 19, Timm teaches wherein the communication channel comprises an Ethernet compatible communications channel (the support of 10 Base T Ethernet to the customer premises thus the channel is Ethernet compatible of FIG. 2d, col. 12 lines 18-25).

Claim 10, Timm teaches an apparatus comprising control logic (DSP controlling the multimode modem 100 of FIG. 1a, col. 9 lines 1-18), to identify a processing capability of a remote network device (Mid-band Digital Subscriber Line of the Central office modem sending probing tones to the remote Mid-band Digital Subscriber Line of the Residential modem of FIG. 3b, to determine identify its line code capability/preference

ref. by col. 18 lines 40-67), and a media access controller (MAC) (MDSL software controlling the MAC sublayer of the network system ref. by col. 7 lines 39-46), responsive to the control logic to selectively reduce an effective data rate of a communication channel with the remote network device (reduced rate capability of the MDSL-R for interface to the Voice Band Analog Front End 120 which is a channel of lower frequency than the DSL Analog Front End 110 ref. by col. 18 lines 65-67, col. 19 lines 1-16), based at least in part on the identified processing capability of the remote network (rate negotiation to maximize throughput based on processing power ref. by col. 6 lines 54-67, col. 7 lines 1-5), wherein the MAC is to selectively reduce the effective data rate (MDSL software controlling the MAC sublayer of the network system ref. by col. 7 lines 39-46, reduced rate capability of the MDSL-R for interface to the Voice Band Analog Front End 120 of Fig. 1a, col. 18 lines 65-67, col. 19 lines 1-16). Timm does not teach computing a ratio of processing capability of the remote device to a data rate of the communication channel.

Nakashima teaches computing a ratio of processing capability of the remote device to a data rate of the communication channel (mapping the MPEG device rate ratio of MPEG-2 rate to DS3 rate ref. by col. 8 lines 49-58); and selectively insert a number of frames of idle control elements (Null Data Generating Unit 6 of Fig. 1, map null data into stuff area ref. by col. 3 lines 20-27) between at least one frame of substantive content based at least in part based on the computed ratio (contents of MPEG-2 TS Data of Fig. 4c, with Null stuff field 22 determined by Stuff Present Identifier 21 of Fig. 4b, col. 8 lines 18-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission rate mapping of Nakashima to the multimode digital modem of Timm for the purpose of transmitting a sequence of data which is transmitted at a given transmission rate at a desired transmission rate greater than the former transmission rate as suggested by Nakashima (col. 3 lines 9-13).

Claim 11, Timm teaches wherein the control logic sends a capability request to the remote device (channel probing tones representing the various rate Carrierless AM/PM or Discrete MultiTone messages ref. by col. 18 lines 65-67, col. 19 lines 1-10, lines 58-67, col. 20 lines 1-15), and receives a response to the request denoting at least the processing capability of the remote device (Rate Request and Available Rate Notify sent over the Communication Hardware layers 7330 7430 ref. by FIG. 7a, col. 22 lines 51-67, col. 23 lines 58-63).

Claim 12, Timm teaches wherein the control logic receives a broadcast indication from the remote device denoting at least the processing capability of the remote device (data rate requests transmitted to a Wireless Network Unit 2010 from a customer premises modem wherein the transmission are broadcasts over a wireless medium inclusive of the rate negotiation messages of FIG. 2g, col. 14 lines 11-38).

Claim 21, Timm teaches wherein the communication channel comprises an Ethernet compatible communications channel (the support of 10 Base T Ethernet to the customer premises thus the channel is Ethernet compatible of FIG. 2d, col. 12 lines 18-25).

Claim 16, Timm teaches a computer-readable storage medium comprising content which when executed by an accessing computing device (memory SRAM 184

containing line code programs for execution by the DSP 150 of the modem 100 of FIG. 1c, col. 9 lines 29-41), causes the device to implement a scalable network interface (Central Office rack of modems of FIG. 2a, col. 10 lines 45-52), to identify a processing capability of a remote network device (Mid-band Digital Subscriber Line of the Central office modem sending probing tones to the remote Mid-band Digital Subscriber Line of the Residential modem to determine identify its line code capability/preference of FIG. 3b, col. 18 lines 49-55), and to selectively reduce an effective data rate of a communication channel between the accessing computing device and the remote network device based at least in part on the processing capability of the remote network device (reduced rate capability of the MDSL-R for interface to the Voice Band Analog Front End 120 which is a channel of lower frequency than the DSL Analog Front End 110 ref. by col. 18 lines 65-67, col. 19 lines 1-16). Timm does not teach to reduce the effective data rate the scalable network interface is to compute a ratio of processing capability of the remote device to a data rate of the communication channel. Nakashima teaches to reduce the effective data rate the network interface is to compute a ratio of processing capability of the remote device to a data rate of the communication channel (mapping the MPEG device rate ratio of MPEG-2 rate to DS3 rate ref. by col. 8 lines 49-58), and selectively insert a number of frames of idle control elements (Null Data Generating Unit 6 of Fig. 1, map null data into stuff area ref. by col. 3 lines 20-27) between at least one frame of substantive content based at least in part based on the computed ratio (contents of MPEG-2 TS Data of Fig. 4c, with Null stuff field 22 determined by Stuff Present Identifier 21 of Fig. 4b, col. 8 lines 18-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission rate mapping of Nakashima to the multimode digital modem of Timm for the purpose of transmitting a sequence of data which is transmitted at a given transmission rate at a desired transmission rate greater than the former transmission rate as suggested by Nakashima (col. 3 lines 9-13).

Claim 23, Timm teaches an apparatus (Central Office multimode digital Modems of Fig. 2a) comprising: control logic to identify a processing capability of a remote network device (Mid-band Digital Subscriber Line of the Central office modem sending probing tones to the remote Mid-band Digital Subscriber Line of the Residential modem of FIG. 3b, to determine identify its line code capability/preference ref. by col. 18 lines 40-67); a media access controller (MAC) (MDSL driver controlling the MAC sublayer of Fig. 11b, col. 38 lines 39-47), responsive to the control logic to selectively reduce an effective data rate of a communication channel with the remote network device (MDSL-C of the Central office modem sending probing tones to the remote MDSL-R of the Residential modem of FIG. 3b, to identify its line code capability/preference with appropriate rate reduction ref. by col. 18 lines 40-67, col. 20 lines 1-15), based at least in part on the identified processing capability of the remote network device (determine identify modem's line code capability/preference ref. by col. 18 lines 40-67, col. 20 lines 1-15); and a plurality of MACs (Central Office modems of Fig. 2a, each with MDSL driver of a MAC sublayer ref. by col. 38 lines 39-47), wherein the plurality of MACs includes the MAC and a second MAC (Central Office modems of Fig. 2a), wherein the MAC and the second MAC are capable of transmission to the remote network device at different rates

(each modem separately determine and identify its line code rate capability/preference ref. by col. 18 lines 40-67), wherein the control logic is to: select a MAC for use in a communication channel with the remote network device base in part on the processing capability of the remote network device being approximately equal to the transmission rate of the selected MAC (determine and identify remote modem line code rate capability/preference in order to transmit at equal rates ref. by col. 18 lines 40-67, col. 20 lines 1-15). Timm does not teach if the selected MAC having a transmission rate approximately equal to the processing capability of the remote network device is not available selecting a MAC having a transmission rate higher than the processing capability of the remote network device.

Nakashima teaches if the selected coding unit having a transmission rate approximately equal to the processing capability of the remote network device is not available (no direct MPEG-2 TS device to remote MPEG-2 TS device connection of Fig. 1), selecting a coding unit having a transmission rate higher than the processing capability of the remote network device (Line Coding Unit 8 for transmission at DS3 rate of Fig. 1, remote device receives at DS3 rate and downconverts to MPEG-2 rate col. 8 lines 30-35), and providing a virtual channel within the transmission capabilities of the higher transmission rate line coder to provide the communication channel with the remote network device based at least in part on the processing capability (virtual channel created through insertion of MPEG-2 TS data into the DS3 frame of Fig. 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission rate mapping of Nakashima to the multimode

digital modem of Timm for the purpose of transmitting a sequence of data which is transmitted at a given transmission rate at a desired transmission rate greater than the former transmission rate as suggested by Nakashima (col. 3 lines 9-13).

Claim 24, Timm teaches a system comprising first and second network elements capable of intercommunicating (second network element Mid-band Digital Subscriber Line of the Central office modem sending probing tones to the first network element Mid-band Digital Subscriber Line of the Residential modem of FIG. 3b, col. 18 lines 40-67), wherein the second network element comprises logic to identify receiving rate capability of the first network element (control logic of the DSP 150 establishing the transmission rate negotiation of FIG. 1a, col. 18 lines 65-67, col. 19 lines 1-10), and logic to selectively reduce a data rate within a communication channel with the first network element based at least in part on the identified processing capability of the first network element (capabilities determined by throughput based on processing power and reduced rate capability of the MDSL-R for interface to the Voice Band Analog Front End 120 which is a channel of lower frequency than the DSL Analog Front End 110 of FIG. 1a, col. 18 lines 65-67, col. 19 lines 1-16, lines 62-67, col. 20 lines 1-15). Timm does not teach wherein the logic to selectively reduce a data rate is to compute a ratio of processing capability of the first network element to a data rate of the communication channel.

Nakashima teaches the logic to selectively reduce a data rate is to compute a ratio of processing capability of the first network element to a data rate of the communication channel (mapping the MPEG device rate ratio of MPEG-2 rate to DS3 rate ref. by col. 8

lines 49-58), and selectively insert a number of frames of idle control elements (Null Data Generating Unit 6 of Fig. 1, map null data into stuff area ref. by col. 3 lines 20-27) between at least one frame of substantive content based at least in part based on the computed ratio (contents of MPEG-2 TS Data of Fig. 4c, with Null stuff field 22 determined by Stuff Present Identifier 21 of Fig. 4b, col. 8 lines 18-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission rate mapping of Nakashima to the multimode digital modem of Timm for the purpose of transmitting a sequence of data which is transmitted at a given transmission rate at a desired transmission rate greater than the former transmission rate as suggested by Nakashima (col. 3 lines 9-13).

Claim 25, Timm teaches wherein the first network element includes a media access controller (MDSL software controlling the MAC sublayer of the network system controlling the host miniport driver ref. by col. 7 lines 32-46.

Claim 26, Timm teaches wherein the first network element includes a media access controller capable of processing transmissions at a speed less than that which the second network element is capable of transmitting (upstream transmission from Residential to CO at a throughput of up to 400 Kbps and a downstream transmission from CO to Residential at a throughput of 400 Kbbs to 2.048 Mbps ref. by col. 6 lines 54-59).

Claim 28, Timm teaches wherein the first and second network elements apply auto-negotiation to determine an acceptable transmission rate for the communication session

(overall rate negotiation method wherein the Change Throughput step 7965 modifies the rate according to the remote device capabilities of FIG. 7f, col. 27 lines 11-17).

Claim 29, Timm teaches an apparatus (Central Office multimode digital Modems of Fig. 2a) comprising: control logic to identify a processing capability of a remote network device (Mid-band Digital Subscriber Line of the Central office modem sending probing tones to the remote Mid-band Digital Subscriber Line of the Residential modem of FIG. 3b, to determine identify its line code capability/preference ref. by col. 18 lines 40-67); a media access controller (MAC) (MDSL driver controlling the MAC sublayer of Fig. 11b, col. 38 lines 39-47), responsive to the control logic to selectively reduce an effective data rate of a communication channel with the remote network device (MDSL-C of the Central office modem sending probing tones to the remote MDSL-R of the Residential modem of FIG. 3b, to identify its line code capability/preference with appropriate rate reduction ref. by col. 18 lines 40-67, col. 20 lines 1-15), based at least in part on the identified processing capability of the remote network device (determine identify modem's line code capability/preference ref. by col. 18 lines 40-67, col. 20 lines 1-15); a plurality of MACs (Central Office modems of Fig. 2a, each with MDSL driver of a MAC sublayer ref. by col. 38 lines 39-47), wherein the plurality of MACs includes the MAC and at least one other MAC (Central Office modems of Fig. 2a), wherein the MAC and the at least one other MAC are capable of transmitting to the remote network device (each modem can determine and identify its line code transmission rate capability/preference ref. by col. 18 lines 40-67), wherein the control logic is to: select at least one of the plurality of MACs for use in a communication channel with the remote

network device (selection of line code for MDSL driver ref. by col. 18 lines 29-36), wherein a combined transmission rate of the selected at least one of the plurality of MACs is approximatedly equal to a receiving capability of the remote network device (identify its line code capability/preference for equal rate transmission ref. by col. 18 lines 40-67, col. 20 lines 1-15); and select one of the plurality of MACs for use in a communication channel with the remote network device (select from DSL modems 100 of Fig. 2a to connect to remote device). Timm does not teach wherein the selected one of the plurality of MACs is capable of a transmission rate higher than the receiving capability of the remote network device.

Nakashima teaches selecting a coding unit having a transmission rate higher than the receiving capability of the remote network device (Line Coding Unit 8 for transmission at DS3 rate of Fig. 1, remote device receives at DS3 rate and downconverts to MPEG-2 rate col. 8 lines 30-35), and providing a virtual channel to provide the communication channel with the remote network device (virtual channel created through insertion of MPEG-2 TS data into the DS3 frame of Fig. 4).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission rate mapping of Nakashima to the multimode digital modem of Timm for the purpose of transmitting a sequence of data which is transmitted at a given transmission rate at a desired transmission rate greater than the former transmission rate as suggested by Nakashima (col. 3 lines 9-13).

Claim 33, Timm teaches wherein the control logic sends a capability request to the remote device (channel probing tones representing the various rate Carrierless AM/PM

or Discrete MultiTone messages ref. by col. 18 lines 65-67, col. 19 lines 1-10, lines 58-67, col. 20 lines 1-15), and receives a response to the request denoting at least the processing capability of the remote device (Rate Request and Available Rate Notify sent over the Communication Hardware layers 7330 7430 ref. by FIG. 7a, col. 22 lines 51-67, col. 23 lines 58-63).

Claim 34, Timm teaches wherein the control logic receives a broadcast indication from the remote device denoting at least the processing capability of the remote device (data rate requests transmitted to a Wireless Network Unit 2010 from a customer premises modem wherein the transmission are broadcasts over a wireless medium inclusive of the rate negotiation messages of FIG. 2g, col. 14 lines 11-38).

Claim 35, Timm teaches wherein the communication channel comprises an Ethernet compatible communications channel (the support of 10 Base T Ethernet to the customer premises thus the channel is Ethernet compatible of FIG. 2d, col. 12 lines 18-25).

Claim 36, Timm teaches a multimode digital modem using a MAC layer protocol. Timm does not teach wherein at least one MAC that is to transmit is to selectively insert at least one idle control element.

Nakashima teaches a controller that is to transmit is to selectively insert at least one idle control element (Communications Device 1 with Null Data Generating Unit 6 of Fig. 1, map null data into stuff area ref. by col. 3 lines 20-27), between at least one frame of substantive content associated with a communication with the remote device (contents of MPEG-2 TS Data of Fig. 4c, with Null stuff field 22 determined by Stuff Present Identifier 21 of Fig. 4b, col. 8 lines 18-21), to reduce the effective data rate of the

communication channel (reduce utilization by mapping MPEG2 TS into DS3 network channel ref. by col. 8 lines 36-42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission rate mapping of Nakashima to the multimode digital modem of Timm for the purpose of transmitting a sequence of data which is transmitted at a given transmission rate at a desired transmission rate greater than the former transmission rate as suggested by Nakashima (col. 3 lines 9-13).

Claim 37, Timm teaches a multimode digital modem using a MAC layer protocol.

Timm does not teach wherein to reduce the effective data rate, at least one MAC is to compute a ratio of processing capability of the remote device to a data rate of the communication channel.

Nakashima teaches at least one controller to compute a ratio of processing capability of the remote device to a data rate of the communication channel (mapping the MPEG device rate ratio of MPEG-2 rate to DS3 rate ref. by col. 8 lines 49-58), and selectively insert a number of frames of idle control elements (Null Data Generating Unit 6 of Fig. 1, map null data into stuff area ref. by col. 3 lines 20-27) between at least one frame of substantive content based at least in part based on the computed ratio (contents of MPEG-2 TS Data of Fig. 4c, with Null stuff field 22 determined by Stuff Present Identifier 21 of Fig. 4b, col. 8 lines 18-21).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission rate mapping of Nakashima to the multimode digital modem of Timm for the purpose of transmitting a sequence of data which is

transmitted at a given transmission rate at a desired transmission rate greater than the former transmission rate as suggested by Nakashima (col. 3 lines 9-13).

Claims 30, 31, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Timm et al. (Patent No. 6055268) and Nakashima et al. (Patent No. US 6636531 B1) as applied to claim 29 above, and further in view of Chang et al. (Patent No. US 6697368 B2).

Claim 30, Timm and Nakashima teach multimode digital modem using null data rate insertion. Timm and Nakashima do not teach a 10Gb/s attachment unit interface (XAUI) communicatively coupled to at least one of the plurality of MACs.

Chang teaches a 10Gb/s attachment unit interface (XAUI) communicatively coupled to a packet processor (packet processor interface to pipe 308 of Fig. 3B, 10G/s XAUI pipe ref. by col. 11 lines 12-25).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the packet processor pipe interface of Chang to the rate mapping multimode digital modem of Timm and Nakashima for the purpose of providing a high-performance switch using circuit card blades to output serial data stream in serial pipes as suggested by Chang (col. 2 lines 24-29).

Claim 31, Timm and Nakashima teach multimode digital modem using null data rate insertion. Timm and Nakashima do not teach wherein the XAUI comprises multiple channels.

Chang teaches the XAUI comprises multiple channels (XAUI pipe 308 transmits parallel outputs 306D of OC-3C 0C-12C and OC-48C of Fig. 3B), and each of the plurality of controllers is capable to transmit over at least one of the multiple channels (blades 104A-104H of Fig. 1, information traverse via pipe 308 to OC channel 306D of Fig. 3B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the packet processor pipe interface of Chang to the rate mapping multimode digital modem of Timm and Nakashima for the purpose of providing a high-performance switch using circuit card blades to output serial data stream in serial pipes as suggested by Chang (col. 2 lines 24-29).

Claim 32, Timm teaches a multimode digital modem. Timm does not teach logic to selectively inject alignment elements in response to more than one of the multiple channels being used to receive frames from at least one of the plurality of MACs. Nakashima teaches logic to selectively inject alignment elements (Null Data Generating Unit 6 of Fig. 1, map null data into stuff area ref. by col. 3 lines 20-27), in response to more than one of the multiple channels being used to receive frames from at least one of the plurality of controllers (Channel 1 MPEG-2 TS and Channel 2 MPEG-2 TS of Fig. 15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission rate mapping of Nakashima to the multimode digital modem of Timm for the purpose of transmitting a sequence of data which is transmitted at a given transmission rate at a desired transmission rate greater than the former transmission rate as suggested by Nakashima (col. 3 lines 9-13).

Response to Arguments

On an update prior art search, the limitations cited by claim 8 previously deemed allowable, are presently rejected. As such, a revised round of rejections are presented. The rejection arguments also pertain to the newly presented claims 29-37.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John L. Shew whose telephone number is 571-272-3137. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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